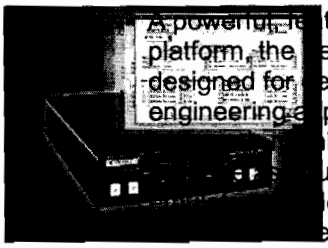
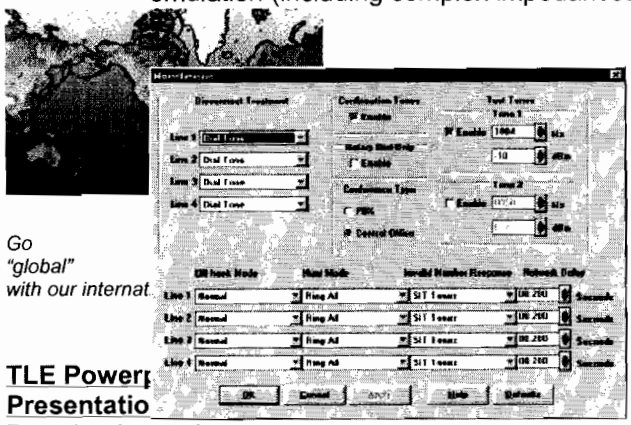
Teltone telephone line emulators

Add "muscle" to your telecom testing



A powerful, feature-rich, telecommunications platform, the Teltone Telephone Line Emulator (TLE) is designed for demanding production test and design engineering applications. The TLE's modular design supports only the capabilities you need, and grows as your requirements change. The base unit simulates the North American telephone network, and is controlled by Windows® configuration software enabling easy and extensive programmability of call progress tones, ring signal, impairments, attenuation, impedances, Type 1/2/3 Caller ID, and more. Add-on software modules allow more advanced simulation, automated testing, and international signaling emulation (including complex impedances and Caller



The TLE windows interface makes programming easy.

Go "global" with our internat

TLE Powerp Presentatio

Download and view on your system. Requires Powerpoint Version 7 for Windows 95, and PKUnZip or WinZip.

Interesting in evaluating the TLE?

To familiarize yourself with the TLE's powerful feature set, we have made available the same software that runs

Software Download:

After you download and install the TLE software on your PC, you will be able to view all the settings used to prog

To download, select the link below and save the file to a temporary location on your hard disk. Double click on th "setup.exe."

This will install a working copy of the TLE-PC Software on your computer. The application will initially be running "Base" mode. To access either the Advanced Simulation Software Module (TLE-ADV), or the International Module (TLE

Download TLE Software

User Manuals:

TLE Features

Four loop start lines:

- Each line has independently programmable characteristics.
- Supports two simultaneous, independent calls.
- Provides fully balanced battery feed and sinusoidal ring generation.
- Operates in either 4-port, or dual 2-port modes.

Network Simulation:

- Base model simulates the North American Telco environment.
- Provides extensive programmability of call progress tones and ring frequencies.

Configurability:

- Basic unit can store two configurations.
- Advanced Test and International software upgrades can support storage of 16 configurations.
- Configuration of the TLE is via a Windows software package provided with the unit.

Two TLE user manuals are currently available in .pdf format. The basic TLE manual includes operating instructio

Manual Download Page

Tip/Ring Features:
• CO grade SLICs
• 10 to 70 mA loop current
• 20 to 80 Vrms sine wave balanced ringing over 17 Hz to 70 Hz, 3 REN drive.
• Ring cadence is programmable.
• 600 ohm/900 ohm selectable line impedance

Call features:
• Three programmable numbers per line
• Programmable attenuation
• Call progress tones are programmable in frequency, amplitude and cadence
• Supports Caller ID, Spontaneous Call Waiting ID with Disposition
• Programmable Caller ID and SIT frequencies and amplitudes
• Programmable test tone frequencies and amplitudes
• Programmable call timings
• Programmable line impedance
• Voice messaging

Product features:
• DSP-based hardware
• Upgradeability via software modules
• Use a PC to create, store, and download configurations
• World-wide operation – 100 to 240 VAC input power range
• Front panel status display
• Audio port for monitoring audio on any line
• CE/NRTL approvals

Add-On Software Modules:

Advanced Simulation:
• Easily simulate echo, white noise, satellite delay, and many other network impairments and conditions
• Enable/disable Caller ID after every ring
• Enable/disable DTMF detection
• Stores 16 configurations internally
• Signal level measurement

International:
• Generates National Call Progress Tones, Ringing frequencies, and Ringing cadences.
• Metering Tones, 12 and 16 kHz
• 12 Predefined Country Settings
• Stores 16 configurations internally (Australia, Brazil, France, Germany, Ireland, Japan, Korea, Netherlands, Singapore, Sweden, UK, US/Canada)
• Simulates calls between country configurations

NEW International Caller ID:

• Provides international Caller ID protocols used in Australia, France, Germany, Netherlands, Singapore, Sweden, UK, and other countries supporting FSK-

and DTMF-based Caller ID.

Automated Test:
• Cut your product costs by reducing test time and eliminating the cost of building custom testers.
• Reduce the number of customized components used in your production test or development lab environments.
• Improve your testing efficiency by being able to quickly change test parameters.
• Automate your testing to shorten test time.
• Control the TLE directly through the serial port using an API.
• Download a test script to speed repetitive testing.
• Provides programmable frequency sweep tone.
• Ability to encode, decode and display DTMF signals and rotary dialed digits.

Ordering Information:

Part Number	Description	Notes
TLE-A-01	Telephone Line Emulator (Base Hardware Unit)	
TLE-ADV	Advanced Test Emulation Software Module	
TLE-TEST	Automated Test Software Module	
TLE-INTL	International Calling Module	
TLE-ICID	International Caller ID Module	Must have or purchase TLE-INTL

TLE Specifications

North American Simulator Representatives and Distributors
International Simulator Distributors

Teltone telecom testing tools

TLE Specifications

AC Power	100-240 VAC, 50/60 Hz 0.6A
Fuse (User Serviceable)	T2.0H (Time delay, 2 A, high interrupt capability), 5 X 20 mm, 2 ea.
Telephone Interface	
Loop Current	10 to 70 mA in 1 mA increments
Battery Source	48 VDC ± 5V
Ringing Source	20 - 80 VAC in 5 V increments
Ring Trip	> off-hook detect time
Ring Cadence	up to 3 cycles set in 5 ms increments
on cycle	0 - 3.0 S
off cycle	0 - 6.3 S
Ring Frequency	17 - 70 Hz in 1 Hz increments
Impedance	600 ohm + 2.2 microF or 900 ohm + 2.2 microF
Insertion Loss	4.0 ± 1.0 dB @ 1000 Hz when both ports are terminated into the selected impedance
Attenuation	4 to 60 dB in 1dB steps
Call Progress Tones	Tone levels are referenced to selected impedance. Single or dual frequencies from 200 to 3000Hz, 1Hz resolution
	Amplitude range is -6 to -60 dBm
Audible Ringback	440 Hz and 480 Hz ± 5% @ -19 ± 3dBm per tone
Dial Tone	350 Hz and 440 Hz ± 5% @ -13 ± 3 dBm per tone (default)
Busy Tone	480Hz and 620Hz ± 5% @ -24 ± 3 dBm per tone (default)
Reorder Tone	480 Hz and 620 Hz ± 5% @ -24 ± 3 dBm per tone (default)
Special Test Tone	1004 Hz ± 5% @ -24 ± 3 dBm (default)
Dialing Characteristics	
Rotary Detection	8 - 22 PPS
percent break range	40 to 80% (LSSRGR6.3.4.6)
min break time	18 ms
max break time	100 ms

	min make time	9 ms
	max make time	75 ms
	interdigit time	300 ms minimum
DTMF Detection		
	frequency accept	± 1.5% ± 2 Hz
	frequency reject	± 3.5%
	tone on time	40 ms minimum
	tone off time	40 ms minimum
	amplitude	+5 to -24 dBm per frequency
	twist	6 dB or less
Temperature Range		
Operating		0° C to +40° C
Storage		-40° C to +55° C
Humidity		Maximum humidity is 85% non-condensing
Altitude		Up to 2,000 meters
Regulatory		
US (UL)		
	FCC Part 15	Conducted & Radiated Emissions
	UL 3111-1	Safety requirements for Electrical Measuring and Test Equipment
Canada (CSA)		
	ICAN CRCc1374	Conducted & Radiated Emissions
	CSA C22.2 No. 1010-1	Safety Requirements for Electrical Equipment for Measuring, Control and Laboratory Use.
Europe (CE)		
	EN55022	Conducted & Radiated Emissions
	EN61000-3-2/3	Harmonic Emissions and Voltage Fluctuations
	EN61010	European Safety Requirements for Electrical Equip ment for Measuring, Control, and Lab use.
	IEC 1000-4-2	Electrostatic Discharge Susceptibility (ESD)
	IEC 1000-4-3	Radiated Immunity
	IEC 1000-4-4	Electrical Transients
Mechanical Specifications		
Dimensions		10.0" W x 13.0" D x 2.85" H
Weight		7 lbs maximum